IN THE CLAIMS:

1. (Currently amended) A system for measuring distances, the system comprising:

a first conductive element ~~conveying a first electromagnetic signal;~~ and a second conductive element so disposed with respect to each other that, when the first and second conductive elements extend through a dielectric mismatch boundary, a first electromagnetic signal will induce ~~conveying~~ a second electromagnetic signal to propagate along the second conductive element ~~based on the first electromagnetic signal~~;

a transmitter operable to drive ~~a coupler positioned at a point of interest for coupling the second electromagnetic signal to the second conductive element in response to a change in capacitance associated with the first conductive element caused by~~ the first electromagnetic signal along ~~traversing a part of~~ the first conductive element without also driving the second conductive element ~~substantially adjacent to the coupler~~; ~~and~~

a receiver operable to receive the second electromagnetic signal; and

a processor operable to determine, ~~determining a distance associated with the point of interest based~~ at least in part from ~~on~~ a time delay between the first and second electromagnetic signals, a distance associated with the dielectric mismatch boundary.

2. (Previously presented) The system of claim 1 wherein the first electromagnetic signal exhibits an ultra-wideband frequency.

3. (Cancelled) The system of claim 1 further comprising a transmitter for forming the first electromagnetic signal.

4. (Currently amended) The system of claim 1 wherein the receiver is further operable to detect ~~comprising a receiver for detecting~~ the time delay between the first and second electromagnetic signals.

5. (Previously presented) The system of claim 4 wherein the receiver includes an equivalent time sampling circuit.

6. (Previously presented) The system of claim 1 wherein the first and second conductive elements form a parallel conductor transmission line structure.

7. (Previously presented) The system of claim 1 wherein the first and second conductive elements are flexible.

8. (Previously presented) The system of claim 1 wherein the first and second conductive elements exhibit quadrilateral cross-sections.

9. (Previously presented) The system of claim 1 wherein the first and second conductive elements exhibit substantially identical cross-sections.

10. (Currently amended) The system of claim 21[[1]] wherein the coupler exhibits a length corresponding to at least one-quarter of a propagation velocity pulse length of the first electromagnetic signal.

11. (Currently amended) The system of claim 21[[1]] further comprising a supporting material for slidably receiving the coupler in a channel defined therein, the supporting material maintaining a consistent displacement between the coupler and the first and second conductive elements.

12. (Previously presented) The system of claim 1 wherein the distance determined by the processor corresponds to a dimension associated with an object.

13. (Previously presented) The system of claim 1 wherein the distance determined by the processor corresponds to a displacement between a plurality of objects.

14. (Previously presented) The system of claim 1 wherein the distance determined by the processor corresponds to an angular orientation.

15. (Previously presented) The system of claim 1 wherein the distance determined by the processor corresponds to a degree of pressure.

16. (Currently amended) A method of measuring distances, the method comprising:

driving ~~transmitting~~ a first electromagnetic signal along ~~on~~ a first conductive element without also driving a second conductive element, where the first and second conductive elements are so disposed with respect to each other that, when the first and second conductive elements extend through a dielectric mismatch boundary, a first electromagnetic signal will induce a second electromagnetic signal to propagate along the second conductive element;

receiving the ~~a~~ second electromagnetic signal ~~based on the first electromagnetic signal at a second conductive element, the second electromagnetic signal being coupled to the second conductive element in response to a change in capacitance of the first conductive element caused by the first electromagnetic signal traversing a part of the first conductive element substantially adjacent to a coupler, wherein the coupler is positioned at a point of interest~~; and

determining, ~~a distance associated with the point of interest based~~ at least in part from ~~on~~ a time delay between the first and second electromagnetic signals, a distance associated with the dielectric mismatch boundary.

17. (Currently amended) The method of claim 16 wherein the distance ~~associated with the point of interest~~ corresponds to a dimension associated with an object.

18. (Currently amended) The method of claim 16 wherein the distance ~~associated with the point of interest~~ corresponds to a displacement between a plurality of objects.

19. (Currently amended) The method of claim 16 wherein the distance ~~associated with the point of interest~~ corresponds to an angular orientation.

20. (Currently amended) The method of claim 16 wherein the distance ~~associated with the point of interest~~ corresponds to a degree of pressure.

21. (New) The system according to claim 1, further comprising:

a coupler slidable along the first and second conductive elements for so coupling the first and second conductive elements as to launch the second electromagnetic signal along the second conductive element when the first electromagnetic signal reaches the position of the coupler.

22. (New) The system according to claim 1, wherein the first electromagnetic signal propagates from a first end of the first conductive element toward a second end of the first conductive element, and the propagation of the first electromagnetic signal through the

boundary will induce the second electromagnetic signal to propagate along the second conductive element toward a first end of the second conductive element.

23. (New) The method according to claim 16, further comprising:

coupling, with a coupler, the first and second conductive elements as to launch the second electromagnetic signal along the second conductive element when the first electromagnetic signal reaches the position of the coupler, wherein the coupler is slidable along the first and second conductive elements.

24. (New) The method according to claim 16, wherein the first electromagnetic signal propagates from a first end of the first conductive element toward a second end of the first conductive element, and the propagation of the first electromagnetic signal through the boundary will induce the second electromagnetic signal to propagate along the second conductive element toward a first end of the second conductive element.

25. (New) A system for measuring distances, the system comprising:

a first conductive element and a second conductive element;

a transmitter operable to drive a first electromagnetic signal along the first conductive element without also driving the second conductive element;

a coupler slidable along the first and second conductive elements for so coupling the first and second conductive elements as to launch a second electromagnetic signal along the second conductive element when the first electromagnetic signal reaches the position of the coupler;

a receiver operable to receive the second electromagnetic signal; and

a processor operable to determine, at least in part from a time delay between the first and second electromagnetic signals, a distance associated with the position of the coupler.